



# **Water Use Permitting**

## **Frequently Asked Questions and Answers**



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## INTRODUCTION

This document is designed to guide applicants through the South Florida Water Management District's (SFWMD) water use permitting process. It is meant to be used in conjunction with the Applicant's Handbook for Water Use Applications within the South Florida Water Management District ([Applicant's Handbook](#)). The first section of the guidance document helps an applicant determine the type of water use permit they need and the associated fee(s), the second section outlines the permitting process and the third section outlines the information an applicant needs in order to complete the application. For more details on the water use permitting requirements and process, applicants should consult the Applicant's Handbook.

### 1.0 DO I NEED A WATER USE PERMIT?

**You will not need to apply for a Water Use Permit for:**

- 💧 Domestic water use at a single family dwelling or duplex using a single withdrawal facility is exempt under [40E-2.051, Florida Administrative Code \(F.A.C.\)](#).
- 💧 Firefighting water wells are exempt under ([40E-2.051, F.A.C.](#)).
- 💧 Single Family/Duplex Landscape Irrigation (e.g. home lawn and ornamental irrigation, car washing, and other incidental uses) at a single family dwelling or duplex is covered under [40E-2.061, F.A.C.](#) as a Permit by Rule. This permit by rule allows for a single onsite withdrawal facility in addition to a domestic use withdrawal facility.
- 💧 Short-Term Dewatering (e.g. well pointing, utility or lake construction, exploratory testing, aquifer performance tests) is covered under [40E-2.061, F.A.C.](#) as a Permit by Rule and must satisfy the following conditions:
  - Maximum daily pumpage of less than 5 million gallons (MG) and a total project pumpage of less than 100 MG over a 1 year period; and
  - All discharge will remain on the project site unless associated with an aquifer performance test; and
  - The dewatering depth will not be below an elevation of 0.0 feet National Geodetic Vertical Datum (NGVD) within 1,000 feet of saline water, except when dewatering water with a chloride concentration of greater than 1,000 milligrams per liter; and
  - Dewatering will not occur within 100 feet of a wastewater treatment plant rapid-rate land application system permitted under Part IV of Chapter 62-610, F.A.C.; and



- Dewatering will not occur within 1,000 feet of a known landfill or contamination; and
  - Dewatering will not occur within 1,000 feet of a freshwater wetland unless dewatering activities are completed within 60 days.
- 💧 Closed-Loop Systems (e.g. cooling/heating systems for swimming pools and air conditioning units)
- Withdrawal and discharge points are on property legally controlled by the permittee; and
  - Water is discharged to the same source, aquifer, or permeable zone for which it is withdrawn; and
  - Water discharge or injection has been permitted by the Florida Department of Environmental Protection (FDEP); and
  - Water has no contact or mixing with other water sources, additives and chemicals.
  - Withdrawal facility is not used for any other consumptive use.
- 💧 Salt water and reclaimed water use in a lined pond do not require a permit.
- 💧 Livestock drinking water from a pond or surface water that is not supplemented with a well or pump does not require a permit.

**You will need to apply for a Water Use Permit to:**

- 💧 Irrigate a golf course or crops with either well water or surface water; nursery stock; and residential landscaping with multiple wells or pumps
- 💧 Water livestock from a well, pump or culvert
- 💧 Withdraw water for industrial and public water supply uses
- 💧 Use reclaimed water that is stored in an unlined lake

## **1.1 WHAT TYPE OF PERMIT DO I NEED?**

SFWMD issues two categories of water use permits, Standard General (GP) Permits and Individual (IND) Permits. General permits include: general permits by rule (does not require that a permit application be submitted) and noticed general permits (Subsection 1.4.1 of the [Applicant's Handbook](#)).



Projects meeting the following allocation, facility and source criteria may qualify for a Noticed General Permit:

**ALLOCATION:**

- The cumulative average daily water use is less than 100,000 gallons per day (GPD) on an annual basis; or
- Has an annual average allocation less than 300,000 GPD for *irrigation purposes* within the South Dade County Water Use Basin as depicted in Figure 21-11, [40E-21 F.A.C.](#) ; or
- Has an annual average allocation less than 10,000 GPD within the Lower Tamiami, Sandstone and Mid-Hawthorn aquifers as depicted in Figures 2-1, 2-2 and 2-3, [40E-2.061, F.A.C.](#)

**FACILITY:**

- Are from facilities having a cumulative withdrawal capacity of less than 1,000,000 GPD;
- Are from groundwater wells less than eight (8) inches in diameter;
- Are from surface water facilities which have a cumulative intake diameter less than six (6) inches;
- Are consistent with requirements of any applicable mandatory reuse zones

**Note:** *Projects in the South Dade County Water Use Basin are exempt from the facility criteria indicated above.*

**SOURCE:**

- Does not use surface water from the C-23, C-24, C-25, L-1, L-2 or L-3 Canal Systems;
- Does not use surface water within the Lake Istokpoga/Indian Prairie Canal System as identified in [Figures 21-20 and 21-21, 40E-21, F.A.C.](#);
- Does not use surface or groundwater within the Picayune Strand or Fakahatchee Estuary, groundwater indirectly from the Picayune Strand or Fakahatchee Estuary or any canal identified in Figure 3-6 of the [Applicant's Handbook](#), or surface water indirectly from any canal identified in Figure 3-6;



- Does not use surface water from the Lower East Coast Everglades Waterbodies or the North Palm Beach County/Loxahatchee River Watershed Waterbodies identified in Figures 3-1 and 3-2 of the [Applicant's Handbook](#) and the integrated conveyance system.
- Does not use surface water from the Nearshore Central Biscayne Bay Reservation canal reaches as identified in [Figure 3-1, Chapter 40E-10, F.A.C.](#)

Projects that do not qualify for a Permit by Rule or Noticed General Permit may be issued an Individual Permit:

- Irrigation of a golf course; crops with either well water or surface water; nursery stock; and residential landscaping with multiple wells or pumps
- Watering of livestock from a well, pump or culvert
- Withdrawal of water for industrial and public water supply uses
- Use of reclaimed water that is stored in an unlined lake

## 1.2 HOW MUCH DOES A PERMIT COST?

There is no cost associated with a Permit by Rule and no permit application is required. The fee for a Noticed General Permit is \$100.00 if applied for online via ePermitting, or \$350.00 if applied using a hard-copy (paper) application form. Fees for Individual permits vary based on project specifics, maximum monthly allocation and the duration of the water use permit.

## 1.3 WHY DO I HAVE TO PAY A FEE & WHAT WILL MY FEE BE?

Pursuant to [Rule 40E-1.607](#), a water use permit application fee is required and shall be paid to SFWMD when applications are filed. These fees are assessed in order to defray the costs of evaluation, processing, monitoring and inspecting for compliance with consideration of these applications. Fees are non-refundable unless it is determined by SFWMD that a fee is not required or an incorrect fee has been paid. Processing fees for individual water use permit applications are based on the maximum monthly allocation required for the project and the duration of the water use permit ([Fee Schedule](#)). Activities that qualify for a Permit by Rule or are exempt pursuant to Rule [40E-2.051 or 40E-3.051](#), F.A.C. are not subject to the permit application fees as there is no application required to be filed for these types of uses of water.





## 1.4 HOW MUCH WATER CAN I USE?

SFWMD staff use several factors to determine the need for water and the appropriate permit allocation, or demand for the use of water (refer to Section 2.0 of the [Applicant's Handbook](#)).

## 2.0 WHAT IS THE APPLICATION PROCESS?

### Before Completing an Application:

First time applicants are strongly encouraged to schedule a pre-application meeting with SFWMD staff. While this meeting is not required, they are helpful as SFWMD staff can inform applicants what information they will need and identify potential complications.

### Completing an Application:

Submit the application online at [www.sfwmd.gov/ePermitting](http://www.sfwmd.gov/ePermitting) which reduces permit processing time, decreases paperwork and eliminates printing and postage costs ([Instructions to use ePermitting](#)). Alternatively, paper forms are available at [Permitting Forms](#).

### SFWMD Review of an Application:

SFWMD has 30 days to review an application and ask for any necessary additional information in a letter called a "Request for Additional Information" (RAI). The applicant has 90 days to supply the requested information. Sometimes additional RAIs are necessary to complete an application. In these cases, SFWMD staff has 30 days to request information and the applicant has 30 days to respond.

## 2.1 WHAT INFORMATION WILL I NEED TO PROVIDE?

A completed application needs to include the following:

- The quantity and source of the water requested
- The location of the water source
- The location of the wells (for groundwater) or points of withdrawal (for surface water), and/or culverts
- What the water will be used for
- Water conservation and recycling plans
- Impact assessment modeling
- Saline water and/or wetland monitoring plan (if applicable)
- Reclaimed water evaluation
- Dewatering plans and calculations (dewatering permits only)
- The appropriate permit application processing fee ([Fee Schedule](#))



## 2.2 WHERE DO I SUBMIT MY COMPLETED APPLICATION?

Apply online using ePermitting which reduces permit processing time, decreases paperwork, and eliminates printing and postage costs. Payment can be made at the time of application submittal using a credit/debit card (Visa or MasterCard) or personal/business check ([ePermitting](#)). Alternatively, you may mail or hand-deliver a paper application to the following locations:

💧 ***Applications for projects in Charlotte, Collier, Hendry, and Lee***

**Counties:** South Florida Water Management District  
2301 McGregor Blvd.  
Ft. Myers, FL 33901

💧 ***Applications for projects in Orange, Osceola, and Polk Counties:***

South Florida Water Management District  
1707 Orlando Central Pkwy, Suite 200  
Orlando, FL 32809

💧 ***Applications for projects in all other locations:***

South Florida Water Management District  
Attn: Regulatory Support  
P.O. Box 24680  
West Palm Beach, FL 33416-4680

## 2.3 CAN I COMBINE NON-CONTIGUOUS PARCELS IN ONE PERMIT?

Yes, non-contiguous parcels in the **same county** may apply for one water use permit encompassing all such parcels, provided it is shown that the water use for each parcel is for the same water use classification. If multiple water use classifications such as drinking water and landscape irrigation are served by separate withdrawal facilities on separate parcels, a water user should seek separate water use permits.

## 2.4 IF I HAVE A SYSTEM THAT SERVES MULTIPLE CONTIGUOUS PARCELS, CAN I PERMIT EACH PARCEL SEPARATELY?

Yes, however evaluation of the feasibility of using reclaimed water may be required if the combined allocation of all the related permits exceeds 100,000 gallons per day (GPD), and pumpage will have to be monitored and reported.



## **2.5 I HAVE BEEN ASKED TO SUBMIT ADDITIONAL INFORMATION (RAI). IF I HAVE SOME OF THE INFORMATION REQUESTED, BUT NOT ALL OF IT SHOULD I SEND IT IN OR WAIT UNTIL I HAVE EVERYTHING?**

It is best to wait to submit all missing information when you have everything that the reviewer requested. If you submit only a portion of the information requested, you will receive another letter asking for the rest of the missing information.

## **2.6 CAN I EMAIL OR FAX THE INFORMATION REQUESTED IN THE RAI LETTER?**

No. A legal response must be submitted online via [e-Permitting](#) or by regular mail.

## **2.7 I SENT IN EVERYTHING THE REVIEWER REQUESTED IN THEIR RAI LETTER. NOW WHAT HAPPENS?**

The reviewer now has another 30 days to review the response to their letter and determine if the application is complete. If it is, it will be marked complete and the reviewer will have another 30 days for a Noticed General Permit or 90 days for an Individual permit to write the permit and have it approved. If the application is still not complete, the reviewer will write another letter requesting additional information. This letter will have a 30 day deadline to receive a response. This process will continue until the reviewer determines that the application is complete.

## **2.8 HOW LONG WILL IT TAKE TO GET MY PERMIT?**

If the application is for a Noticed General Permit, it must be issued within 30 days from the date of receiving a complete application. If the application is for an Individual permit, it must be issued within 90 days from the date of a complete application for an individual permit. If further information (RAI letter) is requested, it would be within 30 days of the date of receiving the response that completes the application.

## **2.9 HOW DO I GET A COPY OF MY PERMIT?**

When a permit is issued, a copy is emailed or mailed to the owner. In addition, the permit is available online at on our [ePermitting website](#).



## 2.10 I HAVE MY PERMIT. AM I DONE?

It is important to read the water use permit. There is a section of the permit labeled "Standard and Special Permit Conditions." These are the restrictions and requirements that are a part of the permit. These include the allocated amount of water, expiration date of the permit, and any information that needs to be submitted to SFWMD on a regular basis. Please review these requirements and contact Water Use Compliance staff ([Compliance Staff contact information](#)) if you have any questions about the conditions. It is very important that you apply for a renewal of your permit *before* it expires. Failure to do so will mean that your next application may have a shorter duration.

## 2.11 DOES MY PERMIT EXPIRE AND NEED TO BE RENEWED?

All water use permits are issued a permit expiration date and must be renewed prior to that date in order to continue using water legally. Once a water use permit expires the permit holder forfeits their water rights and will have to reestablish them under a new water use permit. Failure to renew the water use permit may result in enforcement action, which could result in fines and the requirement to obtain a new permit to establish the right to use water.

## 3.0 BASIC APPLICATION INFORMATION AND HELPFUL LINKS

The basic information and links listed below will assist you with the information requested on the application forms.

### 3.1 SEARCHING FOR A WATER USE PERMIT

Before submitting an application, you may want to search our database to see if a permit has already been issued for the property/use. This is especially helpful if your project has been in existence for many years.

- 💧 [Database Search](#) - Uses search criteria such as an application number, permit number, project name, company name, applicant last name, county, land use, township, and/or range.
- 💧 [Map Search](#) - Includes the above search criteria in addition to an interactive search map that uses a point and click search radius, zooming tools, panning tool, and magnifying tool. Also, you are able to use an address, intersection, or latitude/longitude in your search.



## 3.2 PROOF OF OWNERSHIP AND PROOF OF ACCESS

All applicants for a water use permit are required to establish proof of ownership to the parcel(s) included in the application. Below are some suggested ways in which to obtain proof of ownership. If the parcel(s) included in the application are leased, then a current copy of a lease agreement needs to be provided with the application. Please note that for leased parcels, the expiration date of the water use permit will match the expiration date of the lease. However, there will be a special condition in the permit to extend the duration provided SFWMD receives a copy of a renewed lease before the old lease expires. Also, if the proposed application will be an independent secondary user from a diversion and impoundment water use permit, then the applicant should provide proof of legal access to the diversion and impoundment system.

- 💧 [Property Appraisers](#) – All Florida counties included.
- 💧 Warranty Deed
- 💧 [Division of Corporations](#) – Search and access filed information for corporations, limited liability companies, limited partnerships, general partnerships, trademarks, fictitious name registrations and liens.

## 3.3 LOCATION MAPS & SITE MAPS

Applications submitted online via ePermitting will automatically have location/site maps created as part of the process. Applicants submitting via paper application packets will need to include a location map (location of the project in the city with visible cross streets) and a site map (an aerial or diagram of the property itself with the withdrawal facilities clearly illustrated on the map). The links below provide an aid to creating the required maps.

- 💧 [Google Maps](#) [Google Earth Download](#) [Live Search Maps](#)

### 3.3.1 - LOCATE THE SECTION, TOWNSHIP, AND RANGE (STR) FOR THE PROJECT

Determining the Section, Township, and Range for a project helps to identify its location within the state of Florida. It is particularly useful in rural areas where there are few roads and towns that could be used to locate the parcel(s) covered in a water use permit application.

- 💧 [What is STR?](#)



- Find my STR: Click on the link below (<http://www.geocommunicator.gov/blmMap/Map.jsp?MAP=OG>) and zoom out the map to find your location. Use the identify tool to see which section, township and range is applicable to the project.

### 3.4 WELL CONSTRUCTION

If the water use permit application has proposed wells or existing wells that require abandonment, then the permit holder will have to obtain the necessary water well construction or abandonment permits from the appropriate water management district or delegated agency. In most cases the delegated agency in the SFWMD area is the Florida Department of Health in each county.

- [Well Construction Permit information.](#)
- Well Completion Reports have been submitted to SFWMD since 1985 and contain well data and well log information. These reports are arranged by section, township, and range and may be accessed [via ePermitting.](#)

For additional Information on Water Well Permitting contact: [wells@sfwmd.gov](mailto:wells@sfwmd.gov)

### 3.5 WITHDRAWAL FACILITY CALIBRATION

All applicants for individual permits are required to submit a calibration report for the water use accounting method of each withdrawal facility with the application. Recalibration is required to be done once every five years and the updated report must be submitted to SFWMD.

- [Calibration Service](#) Providers
- [Flow Monitoring and Calibration Guidelines](#) - Available to provide calibration methods and templates of the accompanying acceptable calibration reports. Proper record keeping, submittal, and assembling an acceptable monitoring program are included. Please contact the compliance analyst assigned to the specific area for any questions or concerns regarding calibration.
- How to [report](#) compliance data (pumpage and monitoring) via ePermitting



### 3.6 CONVERSIONS

The links below are intended to help convert any data the applicant is submitting with their water use permit application.

- 💧 [Linear](#) - Common Length and Distance Conversions
- 💧 [Area](#)
- 💧 [Volume](#)
- 💧 [Elevation Conversion \(North American Vertical Datum \[NAVD\] to NGVD\)](#)

### 3.7 IRRIGATION PERMIT ALLOCATION CALCULATION USED BY SFWMD

For all irrigation water use permits SFWMD normally allocates an amount of water required for a 1-in-10 year drought event using the Modified Blaney-Criddle Method. Calculating Irrigation Demand: You may use this [Microsoft Excel Application](#) to calculate the amount of annual and maximum monthly allocations for irrigation projects. [Starter Instructions: Select the Input tab to choose the rainfall station, crop type, months and growing season (if applicable for annual crops), soil types, irrigation system, and irrigated acres. Click here for information on [rainfall stations and soil types](#). The Exhibit tab will show the results of the calculations in an annual and maximum monthly amount for a 1-in-10 year drought event.]

### 3.8 DO I NEED TO PROVIDE AN IRRIGATION WATER CONSERVATION PLAN AND WHAT INFORMATION DO I NEED TO PROVIDE IF REQUIRED?

Individual water use applications for landscape or golf course irrigation projects must contain a water conservation program that uses Florida-Friendly landscaping principles to include the installation of rain sensor devices, automatic switches or other method that can override the operation of the system when adequate rainfall has occurred.

### 3.9 RECLAIMED WATER REQUIREMENT FOR IRRIGATION PERMITS

According to Subsection 3.2.3 of the [Applicant's Handbook](#), "when reclaimed water is readily available it must be used in place of higher quality water sources, unless it is demonstrated by the applicant that it's use is either not environmentally, economically or technically feasible." Agricultural uses involving the growth of edible fruits and vegetables that will not be peeled, skinned, cooked or thermally processed are NOT required to use reclaimed water unless an indirect application such as furrow, drip, or a subsurface irrigation system is utilized. All other uses must inquire about the availability of utilizing reclaimed water for the project. The local water utility or treatment facility can be contacted to inquire whether reclaimed water is available for the project. A letter





from the appropriate utility should be included in the application. A "back up" permit for emergency use in the event that reclaimed water flows are curtailed or interrupted, may be issued with a duration of 20 years. According to criteria, SFWMD shall consider the former reclaimed water end-user who has lost its supply to best serve the public interest under Section 373.233, Florida Statutes (F.S.)

All applicants applying for a permit of with an annual allocation of at least 100,000 GPD must evaluate the feasibility of using reclaimed water. A letter from the nearest utility must be submitted which indicates whether or not reclaimed water is available in your area. [Read More ...](#)

💧 [Utility Companies](#) (select Florida)

💧 Locate nearest Waste Water Facility [here](#)

[Instructions: Select (click) on "Search by Location" > Select the Zoom tab on the left side of the page and enter a zip code or use the magnifier tool to zoom in to your location. Click the Layers tab and choose the Layers by Name Folder. Click the box for Wastewater Facilities (WAFR). Use the map to locate the facilities in your area of interest. Use the "i" button tool to click on the facility to find the facility name.]

### 3.10 DIVERSION & IMPOUNDMENT SECONDARY USER

Dependent Secondary Users are users of surface water from a diversion and impoundment system that have elected to obtain their water right through the diversion and impoundment permittee's water use permit. A legal agreement must be executed between both parties and submitted to SFWMD with the permit application. This agreement must address the following issues in Subsection 2.3.2 (C)(2) of the [Applicant's Handbook](#).

### 3.11 PUBLIC WATER SUPPLY POPULATION DATA

Public water supply applications must contain validated population data per Subsection 2.3.2 (C)(2) of the [Applicant's Handbook](#). Population numbers can be obtained from the Comprehensive Land Use Plan.

### 3.12 ASSESSMENT AND ADDITIONAL INFORMATION

The following sections describe the information required to complete the evaluation of a water use permit application by SFWMD staff. Water use permit applicants are advised to read Section 3.0 of the [Applicant's Handbook](#) to understand and determine what information they may need to submit with their application and how the SFWMD evaluates an application.





### 3.12.1 WATER RESOURCES AVAILABILITY

The following sections provide links to data that can be used to assess the water resource availability of each requested water source in a permit application. The SFWMD will use information provided by the water use permit applicant to determine the impact to the proposed water resources included in the application

#### 3.12.1.1 GEOGRAPHICAL INFORMATION SYSTEM (GIS) AND HYDROGEOLOGICAL DATA

SFWMD maintains a GIS Library of visual and spatial data for water resources. Please be aware that you will need GIS software to access the mapping features. The database file (extension.dbf) that contains information of the features may be accessed by database software such as Microsoft Excel. The [GIS Library](#) can be accessed from the SFWMD.GOV homepage > Technical Data & Docs > GIS/Maps > SFWMD GIS Data Catalog.

Below the Relevant GIS Data subsection are numerous links to technical publications that contain hydrogeological data for the various aquifers in the SFWMD area. The links are organized by county and region.

#### 3.12.1.2 RELEVANT GIS DATA

- 💧 Canals (SFWMD District): [Hydrography Canals SFWMD](#)
- 💧 Flood Control Structures: [Structures SFWMD](#)
- 💧 Land Use Cover: [Land Cover Land Use 2004](#) / [Manual](#)
- 💧 Section Township Range: [PLSS USGS - strcogo](#)
- 💧 Soil Type (Natural Resources Conservation Service): [Soils SSURGO NRCS](#)
- 💧 Surface Water Management/Environmental Resource Permits: [ERR Surface Water Management Permits](#) / [ERR Environmental Resource Permits](#)
- 💧 Water Use Permits: [ERR Water Use Permits](#) [ERR Water Use - Public Water Supply Permits](#) [ERR Water Use - Diversion and Impoundment Permits](#) [ERR Water Use - Dewatering Permits](#)
- 💧 Withdrawal Facilities: [Water Use Regulation Facility Site](#)
- 💧 Wetland Delineation: Wetlands NWI (National Wetland Inventory) [1984](#), [1990](#), [1991](#), [1995](#), [1999](#), [2011](#)



### 3.12.1.3 AQUIFER PROPERTIES PUBLICATIONS:

The following links are sources of information for the hydrologic and hydrogeological properties of the different aquifers within the SFWMD area.

- 💧 [SFWMD Scientific & Technical Publications](#)
- 💧 [USGS Publications](#)
- 💧 [USGS South Florida Information Access \(SOFIA\)](#)
- 💧 [Florida Geological Survey Publications](#)
- 💧 Miami-Dade County: - [USGS Hydrogeology of Surficial & Plates](#), [USGS Water Levels in Biscayne](#), [Saltwater Intrusion 2014-5025](#), [So. Dade Ag. Pilot Study](#), [USGS Biscayne Aq at L-31N](#)
- 💧 Broward County: - [SFWMD Model](#), [USGS Hydrogeology of Surficial](#), [USGS Saltwater Front Movement](#), [Floridan Salinity](#), [Floridan potential](#)
- 💧 Palm Beach County: - [SFWMD Assess & Model & Appendices](#), [USGS Surficial Water Quality](#), [Lake O area Salinity SAS](#), [Floridan Salinity](#), [SAS High Salinity](#), [Lake O area Floridan](#)
- 💧 Southern Florida: - [Gray Limestone Aquifer & Appendix](#), [ASR testing](#)
- 💧 Central and Southern Florida: - [Hydrogeologic Framework of Floridan Aq](#)
- 💧 Central Florida: [USGS Floridan model](#)
- 💧 The Kissimmee River Basin (Parts of Glades, Highlands, Okeechobee, Orange, Osceola, Polk Counties): - [SFWMD Hydrogeology Assessment & Appendices](#)
- 💧 Highlands County: - [USGS ROMP 29A testing](#), [USGS Hydrogeology of Highlands Co](#)
- 💧 Polk County: [USGS Hydrology of Polk Co.](#)
- 💧 Osceola County: [USGS Geohydrology of Osceola Co.](#)
- 💧 Okeechobee County: - [GW Resources of Okeechobee Co.](#), [SFWMD Hydrogeology Summary](#)
- 💧 Charlotte County: - [SFWMD Resource Inventory](#), [FGS Water Resources](#)
- 💧 Collier County: - [SFWMD Collier Model](#), [GW Resources of Western Collier & Appendix](#)
- 💧 Hendry County: - [GW Resources of Hendry Co. & Appendix](#), [SFWMD Hendry Model](#)
- 💧 Lee County: - [Hydrogeology of Lee Co. & Atlas](#), [Montgomery Report](#), [FGS Geology of Lee Co.](#)
- 💧 Caloosahatchee River Basin: - [USGS Geophysics along Caloosahatchee](#)
- 💧 Lower West Coast: [BEM Report](#)
- 💧 Martin County: [SFWMD Martin Surficial Model](#)
- 💧 St. Lucie County: - [SFWMD St. Lucie Surficial Model](#)
- 💧 Upper East Coast (Martin, St. Lucie and eastern Okeechobee Counties): - [SFWMD Floridan Model](#), [Water Quality-Surficial and Floridan](#), [Hydrogeology of Surficial and Floridan & Appendix](#), [USGS Floridan Aquifer](#)



### 3.12.1.4 DBHYDRO DATABASE

The DBHYDRO database contains hydrological, meteorological, hydrogeological, and water quality data. Such data includes discharge volumes (rivers & canals), water quality data, lithological logs, geophysical logs, water level and stage elevations, aquifer performance test (APT) data, and links to photographs and technical reports. The [DBHYDRO Browser](#) allows you to search DBHYDRO, using one or more criteria, and to generate a summary of the data from the available period of record. You can then select data sets of interest and have the time series data dynamically displayed on your screen in tables or graphs. You can also download data to your computer for later use. Below are two examples of places to find APT data and lithological logs.



#### **APT data using DBHYDRO**

[Starter Instructions: Select Hydrogeologic Data on the [DBHYDRO](#) Browser Menu > click Hydrogeological Data > Accept > Check (☐) borehole purpose (and any other criteria to limit search) > select "Aquifer Performance Test" > select "submit". Data is in Excel format and pdf format for metadata.]

#### **Lithological Logs using DBHYDRO**

[Starter Instructions: Find [DBHYDRO](#) from the SFWMD.GOV homepage by first finding (left margin) Technical Data & Docs >\* Environmental Database > DBHYDRO Browser > DBHYDRO Browser Menu > click Hydrogeological Data > Accept > Check (☐) Criteria (ex: township, range, county) > Check (☐) Summary Report to see the Lithological Log > Select wells of interest that have "yes" under the Lithological log column.]

### 3.12.1.5 GROUNDWATER WELLS AND SURFACE WATER DATA

-  [United States Geological Survey \(USGS\)](#) maintains a web site that provides data on water level elevations, water quality, and discharge volumes for monitoring wells and stations in table and graphic format.
-  [Lee County](#) (select Well Inventory and Collier ([Collier County Well Database](#))) counties maintain a well database that includes domestic wells.

### 3.12.2 Restricted Allocation and Water Reservation Areas

There are certain areas within SFWMD where water is reserved for environmental needs or new/increases in current water use are limited due to pressure on the water resource. The links below provide information to help determine if an application lies near a restricted allocation area.



Subsection 3.2.1 of the [Applicant's Handbook](#) identifies the following Restricted Allocation Areas:

- Lake Istokpoga/Indian Prairie Canal System
- C-23, C-24, & C-25 Canal System
- L-1, L-2, & L-3 Canal System
- Martin & St. Lucie County Pumps on the Floridan aquifer
- Lower East Coast Regional Water Availability
- Lake Okeechobee Service Area Water Availability

Subsection 3.11 of the [Applicant's Handbook](#) identifies water reservation areas:

Areas listed below require reasonable assurances that the proposed use will not withdraw water reserved under subsections 40E-10.041 (1) and (2), F.A.C.

- Picayune Strand
- Fakahatchee Estuary
- Caloosahatchee River (C-43) West Basin Storage Reservoir
- North Fork of St. Lucie River
- Nearshore Central Biscayne Bay

### 3.12.3 MODELING

Section 3.1.2 of the [Applicant's Handbook](#) discusses applicable and acceptable modeling for impact assessments. [Models](#) can be analytical or numerical, calibrated or uncalibrated, and require parameters concerning the aquifer properties as well as pumpage rates. SFWMD staff will evaluate the results of the impact assessment modeling to interpret how the proposed water use will affect the water resource, existing legal users, wetland environment, and the horizontal and vertical migration of saline water and contaminants from pollution sources. SFWMD staff considers the area of influence from a user to be the 0.1 foot drawdown contour for an unconfined aquifer and the 1 foot drawdown contour for a confined aquifer. If one or more existing legal users fall within the area of influence, SFWMD staff will require an applicant to run an additional model that includes all existing and pending water use applications within the zone. For help determining if an aquifer is considered confined or unconfined, SFWMD recommends contacting Water Use Bureau staff for clarification.

Aquifer Properties: Transmissivity may be found using the DBHYDRO database (see DBHYDRO section). Hydraulic conductivity may be calculated from the transmissivity by dividing by the aquifer thickness. Storativity for unconfined aquifers may also be found using the DBHYDRO database. APT tests do not primarily focus on storage coefficients for an unconfined aquifer and therefore there is more uncertainty and variability for that attribute. A generic conservative value is 0.1 for an unconfined aquifer and 0.00001 for a confined aquifer. If there are data from an onsite APT, the water use permit applicant can use these for the impact assessment modeling. If no onsite data exists, Section 3.1.2 of the Applicant's Handbook explains how to determine the appropriate aquifer parameters.



### 3.12.3 ANALYTICAL MODELS

Analytical models may be used to provide impact assessments per Section 3.1.2 of the [Applicant's Handbook](#). [Visual AEM](#) is a graphical user interface that incorporates analytical data to generate a groundwater or surface water model and is available to download as freeware. The model should be simulated for 90 days without recharge (output time in Visual AEM) which represents a 1-in-10 year drought event. Aquifer characteristics such as transmissivity, storativity, and leakance may be found using publications from the USGS, SFWMD DBHYDRO database, or conducting an APT or specific capacity test at the site.

#### **Theis Model:**

This model is the basic model used to represent hydrogeological conditions in South Florida for unconfined aquifers.

#### **Hantush-Jacob Model:**

This model is used to represent an aquifer that is semi-confined with an overlying (or below or both) layer that is leaky. A leakage factor (L) in units of length must be included for leaky aquifers and a storage coefficient (S') and hydraulic conductivity (K') for the semi-confining unit. The leakage factor or leakance is the semi-confining unit's hydraulic conductivity (K') divided by the thickness of the semi-confining unit (b'). A coefficient that is used in the Hantush-Jacob Model is referred to as "B" which is equal to the square root of the Leakance Factor divided by the aquifer transmissivity. Often, you must calculate the reciprocal of "B" or 1/B to use in the Hantush-Jacob Model.

### 3.12.3.2 NUMERICAL MODELS

#### **Non-Calibrated Numerical Model**

Numeric models, such as the USGS three dimensional finite difference model MODFLOW, without calibration, are acceptable but must meet the following criteria:

- Contain no greater than two layers;
- Each layer uses a single value for aquifer parameters (transmissivity/permeability, storage/storativity) and a single value for leakance between layers;
- Simulation time is 90 days without recharge;
- Surface water features may be represented with the highest storativity value of 1.0 but cannot function as a source to provide recharge to an aquifer.

#### **Calibrated Numerical Model**

These models are used to simulate complex aquifer systems or types of water use permits (large public water supply utilities) that may contain multiple layer aquifers changing hydraulic conductivity and migration of saline water. Calibration involves matching water level, and sometimes water quality data, monitor data across the model domain averaged monthly for a selected historical period. Model calibrations will be conducted using monthly time steps for a



minimum timeframe of 18 consecutive months. The simulation model run shall be conducted using monthly time steps starting with a minimum of three months of average annual demand and rainfall, followed by twelve months of 1-in-10 year drought conditions, followed by a minimum of six months of average annual demand and rainfall. The applicant shall utilize SFWMD Water Use Management System Design and Evaluation Aids: Supplemental Crop Requirement and Withdrawal Calculation in Subsection 2.3.2 of the [Applicant's Handbook](#), to determine the 1-in-10 year drought and average rainfall conditions for the purpose of evaluating drought recharge rates.

#### **Additional Modeling Sources**

Numerical model software, such as [MODFLOW](#), is available via the USGS public domain, which is a three-dimensional finite-difference based model. Some popular graphical user interfaces for MODFLOW, that require purchase, include [Visual MODFLOW](#), [Groundwater Vistas](#), and [Groundwater Modeling System](#). MODFLOW models by [county/basin](#) that accompany SFWMD Technical Publications are available to download. These models may be considered in assisting in your model development by using a telescopic mesh refinement procedure. Other helpful USGS software links are [Water Resource Applications Software](#), [Groundwater Software](#) and [Surface Water Software](#).



### **3.12.4 EXISTING LEGAL USERS AND OFFSITE LAND USES**

Subsection 3.7 of the [Applicant's Handbook](#) discusses the definition of an Existing Legal User and criteria used that indicates protection of the Existing Legal User. Modeling may be used to demonstrate impacts to an Existing Legal User. If 0.1 foot of drawdown for an unconfined aquifer, or 1.0 foot of drawdown for a confined aquifer (boundary of the cone of depression) or less can be demonstrated at the withdrawal facility of the nearest Existing Legal User, SFWMD recognizes this as minimal impact.

Section 3.6.1 of the [Applicant's Handbook](#) prohibits harm for a consumptive water use withdrawal to land uses that are dependent upon water being on or under land surface.

### **3.12.5 SALINE WATER INTRUSION**

The applicant must evaluate the potential impact the proposed water use will have on the lateral or vertical migration of saline water. The evaluation will consider site specific water quality data, regional water quality data, and impact assessment modeling results. Below are some suggested resources water use permit applicants can use to determine proximity of their project site to sources of saline water and if they need to evaluate the potential for migration.

-  Saline Water Intrusion is discussed in Section 3.4 of the [Applicant's Handbook](#)
-  Saline Water Monitoring Section 4.2 of the [Applicant's Handbook](#)





- 💧 [Saline Intrusion Monitoring Program \(SWIM\) Guide](#) and section for chloride (SALT) monitoring programs.
- 💧 Publications on saline intrusion – find links in Publications section
- 💧 [SFWMD saline line maps](#)
- 💧 Salt Water Interface
  - [Palm Beach County, Martin, St. Lucie 1997-98](#)
  - [Broward County 1990](#)
  - [Miami-Dade County 2011](#)
- 💧 [USGS South Florida interactive data maps](#)

### 3.12.6 WETLANDS

The applicant must evaluate the potential impact the proposed water use will have on wetlands. The evaluation will consider site specific water quality data, regional water quality data, and impact assessment modeling results. Section 3.3 and 4.3.2 of the [Applicant's Handbook](#) describe wetlands and other surface water evaluations. Below are some suggested resources water use permit applicants can use to determine if wetlands occur on or near their project site and if they need to evaluate the potential for impacts to occur from the proposed water use.

#### Resources:

- 💧 Wetland and Other Surface Water Delineation, Chapter 62-340, FAC  
<https://www.flrules.org/gateway/ChapterHome.asp?Chapter=62-340>
- 💧 Florida Department of Environmental Protection Wetland Evaluation and Delineation  
<http://www.dep.state.fl.us/water/wetlands/delineation/index.htm>
- 💧 National Wetlands Inventory  
<http://www.fws.gov/wetlands/index.html>
- 💧 Florida Land Use, Cover and Forms Classification System (FLUCCS)  
<http://www.dot.state.fl.us/SurveyingAndMapping/documentsandpubs/fluccmanual1999.pdf>
- 💧 Classification of Wetlands and Deepwater Habitats of the United States  
<http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm>
- 💧 Uniform Mitigation Assessment Method, Chapter 62-345, FAC  
<https://www.flrules.org/gateway/ChapterHome.asp?Chapter=62-345>
- 💧 Water Use/Consumptive use Permits – Wetlands/Surface Waters Monitoring Plan Guidelines
- 💧 [Draft Wetlands Monitoring Guidelines](#)



### 3.12.7 POLLUTION RESOURCES

The applicant must evaluate the potential impact the proposed water use will have on the migration of pollution from nearby sources. The evaluation will consider site specific water quality data, regional water quality data, and impact assessment modeling results. Section 3.5 of the [Applicant's Handbook](#) describes degradation of surface or groundwater quality by withdrawals causing movement of pollutants. Below are some suggested resources water use permit applicants can use to determine the proximity of their project site to sources of pollution and if they need to evaluate the potential for contaminant migration.

- 💧 [OCULUS](#) - Documents from the Storage Tanks, Hazardous Waste, Solid Waste, and Waste Cleanup Program Areas are now available to the public through the OCULUS electronic document management system.
- 💧 [Public codes, tables, reports](#) - Bureau of Petroleum Storage Systems, Storage Tank & Petroleum Contamination Monitoring Reference Table Categories.
- 💧 [Florida Department of Environmental Protection Contamination Locator Map](#)
- 💧 [PBC Solid Waste Authority](#) - The SWA is the agency responsible for providing an integrated solid waste management and recycling system for Palm Beach County, Florida.
- 💧 [District Offices](#) of Florida Department of Environmental Protection (FDEP) – Find contact names in each District office to get more information about contamination sites.
- 💧 [ENVIROS](#) - The Broward County Environmental Inquiry and Resource System (ENVIROS) provides information on environmental permits, licenses and regulatory enforcement in Broward County, Florida.
- 💧 [BCDEP](#) - Broward County Environmental Protection Department
- 💧 [PBC ERM](#) - Palm Beach County Environmental Resource Management
- 💧 Wellfield Protection Area Maps
  - [Palm Beach County](#)
  - [Broward County](#)
  - [Miami-Dade County](#)
  - [Lee County](#)





### 3.12.7.1 FLORIDA ADMINISTRATIVE CODE ON STATE WATER QUALITY STANDARDS:

- 💧 Dry-cleaning Solvent Cleanup Criteria: [Chapter 62-782 FAC](#) A list of dry-cleaning contaminants of concern (Table A) is located near the end of this document.
- 💧 Groundwater Water Quality Standards for Water Discharged to Groundwater: [Chapter 62-520 FAC](#): [G-I](#) & [F-I](#) Aquifer (potable water with total dissolved solids < 3,000 mg/l) [G-II](#) Aquifer (potable water & total dissolved solids < 10,000 mg/l) [G-III](#) Aquifer (non-potable water or total dissolved chlorides > 10,000 mg/l)
- 💧 Groundwater & Surface Water Cleanup Standards required after contamination: [Chapter 62-777 FAC](#)
- 💧 Drinking Water Standards & Secondary Drinking Water Standards: [Chapter 62-550 FAC](#)
- 💧 Natural Attenuation Default Concentrations: [Chapter 62-777 FAC](#)
- 💧 Surface Water Quality Standards and Required Water Quality of Discharged Water to Surface Waters: [Chapter 62-302 FAC](#)

### 3.12.7.2 OTHER INFORMATIONAL SITES:

- 💧 [FDEP](#) (Florida Department of Environmental Protection) HOME
- 💧 [FDEP ERP](#) (Environmental Resource Permits)
- 💧 [District Offices](#) FDEP
- 💧 [USGS](#) (United States Geological Survey) Home
- 💧 USGS [Ground-Water Networks](#)
  - USGS [Water Data for the Nation](#)
  - [Ground Water Atlas](#) of the United States (Alabama, Florida, Georgia, and South Carolina)
  - [Florida Map Viewer](#)



[United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey](#)

### 3.13 WATER CONTROL DISTRICTS

Applicants requesting to use water from a canal belonging to a [Water Control District](#) must submit an authorization from the Water Control District to withdraw water from their canal.